

## WE CLAIM:

1. An apparatus for controlling an optical transceiver having an optical signal generator and a detector, the apparatus comprising:

5 an output lens for transmitting an optical output signal from the generator;

an input lens for receiving and directing an optical input signal at the detector;

10 a monitor optical signal generator for generating a reference optical signal;

a monitor optical signal detector for receiving the reference optical signal; and

15 a lens housing for mounting the output lens to transmit optical output signals, and for mounting the input lens to receive optical input signals,

the lens housing including a reflective surface adapted for receiving the reference signal from the monitor optical signal generator and for directing the reference signal to the monitor optical signal detector.

20 2. The apparatus of claim 1 wherein the reference optical signal is substantially identical the optical output signal.

25 3. The apparatus of claim 1 further including a controller adapted for receiving a monitoring signal from the monitor optical signal detector indicative of the reference optical signal, and for controlling the output optical signal of the generator in response to the monitoring signal.

4. The apparatus of claim 1 wherein the optical signal generator, monitor optical signal generator, monitor detector, and optical signal detector is disposed in that order in a planar array.

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5. The apparatus of claim 1 wherein the reflective surface includes a first and a second reflective segment thereof, with the first reflective segment adapted for receiving the reference optical signal from the monitor optical signal generator and directing the reference optical signal to the second reflective segment, and with the second reflective segment adapted for receiving the reference signal from the first reflective segment and directing the reference signal to the monitor optical signal detector.

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6. The apparatus of claim 5 wherein the optical signal generator, monitor optical signal generator, monitor optical signal detector, and optical signal detector are disposed in that order in a planar array.

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7. The apparatus of claim 5 wherein the optical output and input signals are directed through the lens housing substantially parallel to one another.

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8. The apparatus of claim 5 wherein the reference optical signal travels to and from the lens housing in substantially parallel fashion.

9. The apparatus of claim 5 wherein:

the optical signal generator, monitor optical signal generator,  
monitor optical signal detector, and the optical signal detector is disposed in that

5 order in a planar array;

the optical output and input signals are directed through the lens  
housing substantially parallel to one another; and

the reference optical signal travels to and from the lens housing in  
substantially parallel fashion.

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10. An apparatus for controlling an optical transceiver having an optical  
signal generator and a detector, the apparatus comprising:

an output lens for transmitting an optical output signal from the  
generator;

15 an input lens for receiving and directing an optical input signal at  
the detector;

a monitor optical signal generator for generating a reference optical  
signal;

20 a monitor optical signal detector for receiving the reference optical  
signal; and

a lens housing for mounting the output lens to transmit optical  
output signals, and for mounting the input lens to receive optical input signals,  
the lens housing including a reflective surface having a first reflective segment  
thereof adapted for receiving the reference optical signal from the monitor optical  
25 signal generator and a second reflective segment thereof for directing the  
reference optical signal to the monitor output signal detector.

11. The apparatus of claim 10 wherein:

the optical signal generator, monitor optical signal generator,  
monitor optical signal detector, and the optical signal detector are disposed in  
5 that order in a planar array;

the optical output and input signals are directed through the lens  
housing substantially parallel to one another; and

the reference optical signal travels to and from the lens housing in  
substantially parallel fashion.

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12. A method for controlling an optical transceiver having an optical  
signal generator and an optical signal detector, the method comprising:

providing a monitor optical signal generator for generating a  
reference optical signal, and a monitor optical signal detector for receiving the  
15 reference optical signal;

mounting an input lens and an output lens in a lens housing having  
a reflective surface for receiving the reference optical signal from the monitor  
optical signal generator and directing the reference optical signal to the monitor  
optical signal detector;

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generating an optical output signal from the optical signal  
generator;

directing the output optical signal through the output lens;

receiving an optical input signal through the input lens;

directing the optical input signal to the optical signal detector;

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generating a reference optical signal with the monitor optical signal  
generator;

receiving the reference optical signal at the reflective surface of the  
lens housing; and

directing the reference signal to the monitor optical signal detector.

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13. The method of claim 12 further including operating the monitor optical signal generator with a reference signal substantially identical to the output optical signal.

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14. The method of claim 12 further including comparing the reference optical signal to a standard reference and adjusting the output optical signal to achieve a desired reference optical signal.

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15. The method of claim 12 further including adjusting the output optical signal as a function of the reference optical signal received at the monitor optical signal detector.

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